

CLAIMS

What is claimed is:

- 5 1. A system for identifying concerns, comprising:

 a specifying device for specifying at least one initial concern; and

 an identifying device for identifying at least one related concern having a relationship

with said at least one initial concern.
- 10 2. The system according to claim 1, wherein said at least one initial concern comprises a

plurality of entities.
3. The system according to claim 1, wherein said relationship comprises a call to said at

least one initial concern.
- 15 4. The system according to claim 1, wherein said relationship comprises a call from said at

least one initial concern.
5. The system according to claim 1, wherein said relationship comprises a same class that
20 can be created by the concern, a same class that can be created from the concern, a reference to
same data as the initial concern, and a union or intersection of two concerns.

6. The system according to claim 1, wherein said specifying device comprises a query tool for inputting a query, such that said initial concern is returned as a result of said query.

7. The system according to claim 1, wherein said at least one initial concern and said at least one related concern comprise source code in a software system.

8. The system according to claim 1, wherein said at least one initial concern and said at least one related concern comprise other than source code in a software system.

9. The system according to claim 6, further comprising:
a navigating device for navigating said software system in an integrated development environment (IDE).

10. The system according to claim 6, wherein said system is part of an integrated development environment (IDE) for displaying said at least one initial and at least one related concern, and navigating said software system.

11. The system according to claim 9, wherein said navigating device comprises a graphical user interface (GUI) for using said at least one initial concern and said at least one related concern to explore said software system and construct a new software system.

12. The system according to claim 9, wherein said navigating said software system comprises navigating said software system using both virtual and actual structuring of different

artifacts within said software system.

13. The system according to claim 9, wherein said navigating said software system comprises using said navigating device to explore concerns and the relationships between said concerns based on a visual representation of query results.

14. The system according to claim 9, wherein said navigating device comprises a visual diagram which gives call relations between different parts of a program selected by query operators expressed as regular expressions.

15. The system according to claim 1, wherein said identifying said at least one related concern comprises automatically generating said at least one related concern.

16. The system according to claim 1, wherein said specifying device comprises at least one of a keyboard and a mouse for specifying said at least one initial concern.

17. The system according to claim 1, wherein said specifying said at least one initial concern comprises defining a query language comprising a set of operators and evaluation properties that together work to identify concerns within different artifacts that make up a software system.

18. A concern manipulation environment (CME) comprising the system of claim 1,

19. The concern manipulation environment of claim 18, wherein a data structure is maintained for keeping concerns in synch with changes in a software system.

20. A system for identifying concerns, comprising:

5 a specifying device for specifying a query against artifacts related to software development,

including software, generated code, or models and information about software;

means of displaying the results of the query; and

means of updating the query when at least one of new artifacts are introduced,

10 artifacts are deleted, and artifacts are changed.

21. The system of claim 20, wherein said results of said query comprise a concern.

22. A method of identifying concerns, comprising:

15 specifying at least one initial concern; and

identifying at least one related concern having a relationship with said at least one initial concern.

23. The method according to claim 22, wherein said relationship comprises at least one of a

20 call to said at least one initial concern and a call from said at least one initial concern.

24. The method according to claim 22, wherein said specifying said at least one initial concern comprises using a query tool for inputting a query, such that said initial concern is

returned as a result of said query.

25. The method according to claim 22, further comprising:

displaying said at least one initial concern and said at least one related concern; and

5 navigating said software system in an integrated development environment (IDE).

26. The method according to claim 22, wherein said identifying said at least one related concern comprises automatically generating said at least one related concern.

10 27. The method according to claim 22, wherein said at least one initial concern comprises at least one of an extensional concern and an intensional concern.

28. A method of generating concerns, comprising:

identifying a first concern;

15 examining a program using said first concern;

identifying a second concern using said first concern and text of said program; and

displaying and navigating concerns in an integrated development environment (IDE).

29. A programmable storage medium tangibly embodying a program of machine-readable

20 instructions executable by a digital processing apparatus to perform a method of identifying concerns, said method comprising:

specifying at least one initial concern; and

identifying at least one related concern having a relationship with said at least one

initial concern.

30. A method for deploying computing infrastructure in which computer-readable code is integrated into a computing system, such that said code and said computing system combine to

5 perform a method of identifying concerns, said method of identifying concerns comprising:

specifying at least one initial concern; and

identifying at least one related concern having a relationship with said at least one initial concern.